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## NOTICE OF ALLOWANCE AND FEE(S) DUE

41505

7590

12/08/2008

WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)  
CIRA CENTRE, 12TH FLOOR  
2929 ARCH STREET  
PHILADELPHIA, PA 19104-2891

EXAMINER

CHUONG, TRUC T

ART UNIT

PAPER NUMBER

2179

DATE MAILED: 12/08/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/617,669

07/17/2000

Eric P. Traut

MYIR-0108 / 304101.01

8184

TITLE OF INVENTION: SYSTEM AND METHOD FOR DISPLAYING CURRENT IMAGES OF VIRTUAL MACHINE ENVIRONMENTS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	03/09/2009

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.**

### HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

# PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**

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**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

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41505 7590 12/08/2008

**WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)**  
CIRA CENTRE, 12TH FLOOR  
2929 ARCH STREET  
PHILADELPHIA, PA 19104-2891

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE-FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/617,669	07/17/2000	Eric P. Traut	MVIR-0108 / 304101.01	8184

TITLE OF INVENTION: SYSTEM AND METHOD FOR DISPLAYING CURRENT IMAGES OF VIRTUAL MACHINE ENVIRONMENTS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	03/09/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHUONG, TRUC T	2179	345-838000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2  
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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09/617,669	07/17/2000	Eric P. Traut	MVIR-0108 / 304101.01	8184
41505	7590	12/08/2008	EXAMINER	
WOODCOCK WASHBURN LLP (MICROSOFT CORPORATION)				
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2929 ARCH STREET				
PHILADELPHIA, PA 19104-2891				
			ART UNIT	PAPER NUMBER
			2179	
DATE MAILED: 12/08/2008				

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 94 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 94 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

09/617,669

**Examiner**

TRUC T. CHUONG

**Applicant(s)**

TRAUT ET AL.

**Art Unit**

2179

**- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERIT IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 09/18/08.
2. ☒ The allowed claim(s) is/are 1,3,6-8,11-13,16,21-23 and 25-34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. Applicants' Attorney, Mr. David M. Platz and Examiner discussed and agreed to amend and cancel to the current claims in the phone interview on Tuesday, December 2, 2008, and the Applicant gives the Examiner permission to correct the issue on Examiner's Amendment. The Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. **Claims should be amended and canceled as follows:**

1. (Currently amended) A single computer system for running one or more software applications comprising:

a processor;

a computer readable storage medium including instructions executable by the processor,  
the computer readable storage medium comprising:

instructions for a host operating system suitable for displaying a graphical user interface;

instructions for multiple guest operating systems configured to execute on the single computer system in virtual machines emulated by one or more emulator programs running on the host operating system; and

wherein the host operating system is configured to display a reduced-size

continually updated representation of the video output of at least one operating system from the multiple guest operating systems that are being operated in a background mode;

wherein the multiple guest operating systems that operate in a background mode are active;

wherein video output of the multiple guest operating systems is stored in one or more virtual video memory components;

wherein the reduced-size continually updating representation of the video output from at least one guest operating system is represented as at least one thumbnail image, the at least one thumbnail image is generated from the video output stored in the video memory components, and the at least one thumbnail image is generated at predetermined intervals while software applications are active; and

wherein the predetermined intervals are such that the at least one thumbnail image is a real-time representation of the video output from the active software applications.

2. (Canceled).
3. (Currently amended) The computer system of claim 1 [[2]], wherein the one or more of the video memory components are VRAM memory.
4. (Canceled).
5. (Canceled).
6. (Original) The computer system of claim 1,  
wherein the graphical user interface is a windowing environment suitable for displaying

one or more windows; and

wherein the portion of the graphical user interface comprising the reduced-size representation is a window.

7. (Previously presented) The computer system of claim 1, wherein the reduced-size representation is created using a bilinear sampling technique.

8. (Currently amended) A single computer system for running one or more software applications, wherein the software applications are suitable for generating a video output, the computer system comprising:

a host operating system suitable for displaying a graphical user interface;  
multiple emulated virtual machines, containing respective guest operating systems running on the single computer system, being emulated by one or more emulator programs running on the host operating system;

a virtual video memory component configured to store video output of the guest operating systems;

wherein guest operating systems that operate in background mode are active; [and]

wherein the host operating system is able to display for a user reduced-size continually updated representation of the video output of each virtual machine as thumbnail images, the thumbnail images generated from the video output stored in the video memory component, and the thumbnail images are generated at predetermined intervals while software applications are active; and

wherein the predetermined intervals are such that the thumbnail images are real-time representations of the video output from the active software applications.

9. (Canceled).

10. (Canceled).

11. (Currently amended) A method for displaying reduced-size images of multiple virtual machines guest computer systems running on a single computer in virtual machine environments, said method comprising the steps of:

providing a plurality of virtual machines and respective guest operating systems on a host computer that is a single computer, each virtual machine comprising a virtualized computer environment hosting a corresponding one of the guest operating systems on the host computer, where the operating systems hosted on the virtual machines are executing concurrently on the same host computer;

suspending one or more of the multiple virtual machines, and guest computer systems by saving to memory in a host computer system the image of each of the suspended virtual machines, suspended guest computer systems wherein each suspended virtual machine guest computer system having includes a virtual video adaptor;

reading in at an emulator program from memory in the host computer system the images of the suspended virtual machines guest computer systems;

interpreting in the emulator program the contents of saved images of the suspended virtual machines guest computer systems based on video adaptor settings of the virtual video adaptors; and

displaying reduced-size continually updated representations of the suspended virtual



machines ~~guest computer systems~~ as thumbnail images, the thumbnail images continually updated at predetermined intervals.

12. (Currently amended) A method for displaying reduced-size images of virtual machines ~~multiple guest computer systems in virtual machine environments and executing on a single computer system, said method comprising the steps of:~~

providing a plurality of virtual machines and respective guest operating systems on a host computer that is a single computer, each virtual machine comprising a virtualized computer environment hosting a corresponding one of the guest operating systems on the host computer, where the operating systems hosted on the virtual machines are executing concurrently on the same host computer;

reading in from virtual video memory configured to store images in a host computer system the images of the virtual machines ~~guest computer systems~~ each virtual machine ~~guest computer systems~~ having a virtual video adaptor;

wherein guest operating systems that operate in background mode are active;

interpreting in the emulator program the contents of the images of the virtual machines ~~emulated guest computer systems~~ based on video adaptor settings of the virtual video adaptors;

displaying reduced-size continually updated representations of the virtual machines ~~guest computer systems~~, as thumbnail images, the thumbnail images generated from the images stored in the virtual video memory, and the thumbnail images are generated at predetermined intervals while software applications are active; and

wherein the predetermined intervals are such that the thumbnail images are real-time representations of the video output from the active software applications periodically updating the reduced-size representations of the guest computer systems.

13. (Currently amended) The method of claim 12 wherein the step of displaying reduced-size representations of the virtual machines computer systems are performed on a computer system comprising:

the host operating system suitable for displaying a graphical user interface.

14. (Canceled).

15. (Canceled).

16. (Currently amended) The method of claim 12 [[15]] wherein one or more of the virtual video memory is components are VRAM.

17. (Canceled).

18. (Canceled).

19. (Canceled).

20. (Canceled).

21. (Currently amended) A method of displaying images on a display coupled with a host computer, the method comprising:

providing a plurality of virtual machines and respective guest operating systems on the host computer that is a single computer, each virtual machine comprising a virtualized computer environment hosting a corresponding one of the guest operating systems on the host computer, each virtualized computer environment having a virtual video adaptor, where the operating systems hosted on the virtual machines are executing concurrently on the same host computer;

storing video output from the virtual video adaptors in virtual video memory components; interpreting the video output from the virtual video adaptors based on video adaptor settings of the virtual video adaptors; [[and]]

displaying a screen associated with a host operating system on the display together with thumbnail images generated from the interpreted video output from the virtual video adaptors, the thumbnail images are generated at predetermined intervals while software applications are active;

wherein the predetermined intervals are such that the thumbnail images are real-time representations of the video output from the active software applications; and

wherein the multiple guest operating systems that operate in a background mode are active.

22. (Previously presented) The method according to claim 21, wherein the thumbnail images are based on image data from video RAMs of the virtual machines.

23. (Currently amended) A method of displaying an image on a display coupled with a host computer, the method comprising:

providing a first virtual machine running a first guest operating system, the first virtual machine having a first virtual video adaptor, and a second virtual machine running a second guest operating system, the second virtual machine having a second virtual video adaptor, wherein both guest operating systems are configured for concurrent execution on the host computer that is a single computer;

storing video output from the first and second video adaptors in virtual video memory components;

interpreting the video output from the first virtual video adaptor based on video adaptor settings of the first virtual video adaptor and interpreting the video output from the second virtual video adaptor based on video adaptor settings of the second virtual video adaptor;

generating a first and second thumbnail based on the interpreted video output from the first and second virtual video adaptors, wherein the thumbnail images are generated at predetermined intervals while software applications are active; and

concurrently displaying, on the display, the first thumbnail of image output and the second thumbnail of image output, wherein the predetermined intervals are such that the thumbnail images are real-time representations of the video output from the active software applications; and

wherein guest operating systems that operate in a background mode are active; ~~wherein said first thumbnail and said second thumbnail are continually updated.~~

24. (Canceled).

25. (Previously presented) The method according to claim 23, wherein first thumbnail is derived from video RAM of the first virtual machine, and the second thumbnail is derived from video RAM of the second virtual machine.
26. (Previously presented) The method according to claim 23, further comprising allowing a user to interact with the thumbnails to control the virtual machines.
27. (Previously presented) The method according to claim 23, wherein displaying of the thumbnails is accomplished by accessing video RAMs of the virtual machines.
28. (Previously presented) The method according to claim 23, wherein the thumbnail images comprise reduced versions of images generated for display by the virtual machines.
29. (Previously presented) The method according to claim 23, wherein the thumbnails reflect the video outputs of the virtual machines in real time.
30. (Currently amended) A method ~~performed in a single computer configured with a plurality of virtual machines with associated guest operating systems running on the single computer, and software for managing the virtual machines, the virtual machines each comprising a virtual video adaptor having a video RAM, the computer being configured to execute the virtual machines concurrently on the computer, the method~~ comprising:

providing a plurality of virtual machines and respective guest operating systems on a host computer that is a single computer, each virtual machine comprising a virtualized computer environment hosting a corresponding one of the guest operating systems on the host computer, the virtual machines each comprising a virtual video adaptor having a video RAM where the operating systems hosted on the virtual machines are executing concurrently on the same host computer;

storing images from the video RAMs in main memory of the computer;

accessing the video RAMs of the virtual machines to obtain images from the video RAMS;

generating thumbnail images of the images obtained from the video RAMs based on video adaptor settings of the virtual video adaptors, wherein the thumbnail images are generated at predetermined intervals while software applications are active; and

concurrently displaying the thumbnail images that are continually updated, wherein the predetermined intervals are such that the thumbnail images are real-time representations of the video output from the active software applications; and

wherein the guest operating systems that operate in a background mode are active.

31. (Previously presented) The method according to claim 30, the method further comprising:

determining display modes corresponding to, respectively, the video RAMs of the virtual machines; and

generating the thumbnail images in accordance with the display modes.

32. (Previously presented) The method according to claim 30, wherein the thumbnail images are displayed to reflect the video RAMs in real time.

33. (Currently amended) A method, comprising:

providing a plurality of virtual machines and respective guest operating systems on a host computer that is a single computer, each virtual machine comprising a virtualized computer environment hosting a corresponding one of the guest operating systems on the host computer, each virtual machine having a virtual video adaptor, where the operating systems hosted on the virtual machines are executing concurrently on the same host computer;

~~executing an emulator, the emulator configured to emulate virtual machines having virtual video adaptors;~~

~~executing guest operating systems on the virtual machines;~~

storing image data received from the virtual video adaptors in virtual video memory components;

interpreting the image data received from the virtual video adaptors based on video adaptor settings of the virtual video adaptors; [[and]]

displaying thumbnail images generated from the image data, wherein the thumbnail images are generated at predetermined intervals while software applications are active;

wherein the predetermined intervals are such that the thumbnail images are real-time representations of the video output from the active software applications; and

wherein the guest operating systems that operate in a background mode are active where the thumbnail images are displayed together and updated continually.

34. (Previously presented) The method according to claim 33, wherein the displaying further comprises displaying the images in a graphical user interface that can be interacted with by a user to control execution of the virtual machines.

***Allowable Subject Matter***

3. Claims 1, 3, 6-8, 11-13, 16, 21-23, and 25-34 are allowed.
4. The following is an Examiner's statement of reasons for allowance in combination with other claim limitations:

Independent claims 1, 8, 11-12, 21, 23, 30 and 33 when considered as a whole, are allowable over the Prior Art of record. Specifically, the Prior Art of record fails to teach or suggest that the single computer system for running one or more software applications comprising the processor, the computer readable storage medium including instructions executable by the processor, the computer readable storage medium comprising instructions for the host operating system suitable for displaying the graphical user interface, instructions for multiple guest operating systems configured to execute on the single computer system in virtual machines emulated by one or more emulator



programs running on the host operating system, and wherein the host operating system is configured to display the reduced-size continually updated representation of the video output of at least one operating system from the multiple guest operating systems that are being operated in the background mode, wherein the multiple guest operating systems that operate in the background mode are active, wherein video output of the multiple guest operating systems is stored in one or more virtual video memory components wherein the reduced-size continually updating representation of the video output from at least one guest operating system is represented as at least one thumbnail image, the at least one thumbnail image is generated from the video output stored in the video memory components, and the at least one thumbnail image is generated at predetermined intervals while software applications are active and wherein the predetermined intervals are such that the at least one thumbnail image is the real-time representation of the video output from the active software applications.

The computer system for displaying reduced-size images of multiple virtual machines comprises the plurality of virtual machines and respective guest operating systems on the host computer that is the single computer, each virtual machine comprising the virtualized computer environment hosting the corresponding one of the guest operating systems on the host computer, where the operating systems hosted on the virtual machines are executing concurrently on the same host computer, suspending one or more of the virtual machines and saving to memory in the host computer system the image of each of the suspended virtual machines wherein each suspended virtual machine includes the virtual video adaptor for reading in at the emulator program from memory in

the host computer system the images of the suspended virtual machines, interpreting in the emulator program the contents of saved images of the suspended virtual machines based on video adaptor settings of the virtual video adaptors and displaying representations of the suspended virtual machines as thumbnail images, and the thumbnail images continually updated at predetermined intervals.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRUC T. CHUONG whose telephone number is (571)272-4134. The examiner can normally be reached on M-Th and alternate Fridays 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Weilun Lo can be reached on (571) 272-4847. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Truc T. Chuong

12/04/08

/Weilun Lo/  
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